

HAHN AND ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

November 16, 2015

Mr. Dana Bayuk
Oregon Department of Environmental Quality
Northwest Region, Portland Office
Portland Harbor Section
700 NE Multnomah Street, #600
Portland, Oregon 97232

HAI Project No. 2708
DEQ ECSI File No. 84

**SUBJECT: Progress Report, NW Natural Site, 7900 NW St. Helens Avenue and
7200 NW Front Avenue, Portland, Oregon**

Dear Mr. Bayuk:

Hahn and Associates, Inc. (HAI) has prepared this monthly Progress Report to summarize Remedial Investigation/Feasibility Study (RI/FS) and source control-related work activities conducted by NW Natural relating to historic manufactured gas plant (MGP) activities at the NW Natural Site during the month of October 2015. NW Natural is completing upland investigation and cleanup activities at the NW Natural Site under the Voluntary Agreement No. ECVC-WMCVC-NWR-94-13 (Voluntary Agreement) between NW Natural and the Oregon Department of Environmental Quality (DEQ).

1.0 Communications and Document Submittals

In correspondence dated October 2, 2015 (John Renda to Dana Bayuk), Anchor QEA, on behalf of NW Natural, provided proposed design and installation methods for supplemental extraction well PW-1Ub, to be located near the PW-1U extraction well.

In correspondence dated October 6, 2015 (Dana Bayuk to Pradeep Mugunthan), DEQ provided comments from review of NW Natural's September 2, 2015 technical memorandum responding to DEQ's comments on June 15, 2015 groundwater model presentation materials.

A meeting with representatives of DEQ and NW Natural was conducted on October 7, 2015 to discuss DEQ thoughts on a revised tabulation of the existing NW Natural groundwater monitoring program.

In correspondence dated October 8, 2015 (Dana Bayuk to Halah Voges), DEQ provided feedback on the Revised Feasibility Study (FS) Work Plan Outline and marked-up versions of the Human and Ecological Risk Assessment (HERA) Conceptual Site Model (CSM) Power Point presentation slides from the September 21, 2015 FS check-in meeting.

In correspondence dated October 9, 2015 (Halah Voges to Dana Bayuk), Anchor QEA transmitted a summary of the September 21, 2015 and September 29, 2015 FS check-in meetings.

In correspondence dated October 12, 2015 (Terry Driscoll to Rob Burkhart), Aponowich, Driscoll & Associates, Inc. (ADA), on behalf of NW Natural, provided DEQ with a description of planned modifications to the LNG tank basin dewatering system and connections to the groundwater treatment plant. Rob Burkhart approved the system modifications on behalf of DEQ on Tuesday October 13, 2015.

In correspondence dated October 13, 2015 (Halah Voges to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted meeting materials in advance of the October 19, 2015 Gasco Upland FS check-in meeting.

In correspondence dated October 15, 2015 (Chip Byrd to Dana Bayuk), Severson Environmental Services, Inc. (SES) on behalf of NW Natural, provided the *NW Natural Source Control Groundwater Treatment Facility Residual Data Package* (filter cake and bag filter waste) for the third quarter of 2015.

In correspondence dated October 15, 2015 (Terry Driscoll to Rob Burkhart), ADA, on behalf of NW Natural, submitted the *Discharge Monitoring Report, NPDES Permit No. 103061* for the NW Natural Source Control Groundwater Treatment Facility, covering the September 1 to September 30, 2015 timeframe.

A check-in meeting with representatives of NW Natural and DEQ was conducted on October 19, 2015 to discuss ongoing development of the Gasco Uplands FS.

In correspondence dated October 20, 2015 (Dana Bayuk to Halah Voges), DEQ provided feedback on the September 21, 2015 and September 29, 2015 FS check-in call summaries as provided by NW Natural on October 9, 2015.

In correspondence dated October 21, 2015 (Dana Bayuk to John Renda), DEQ provided conditional approval of NW Natural's October 2, 2015 *PW-1U Design and Installation Methods Memorandum*. NW Natural provided concurrence with DEQ's conditions in correspondence dated October 26, 2015 (John Renda to Dana Bayuk).

In correspondence dated October 22, 2015 (John Renda to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted the groundwater chemistry database to DEQ, updated through the second quarter 2015 groundwater monitoring event.

In correspondence dated October 28, 2015 (Halah Voges to Dana Bayuk), Anchor QEA, on behalf of NW Natural, provided DEQ with a summary of agreements/outcomes from the October 19, 2015 Gasco FS check-in meeting.

In correspondence dated October 31, 2015 (John Renda to Dana Bayuk), Anchor QEA, on behalf of NW Natural, transmitted four sets of HC&C system Figures including the Phase 2 60-day Test and sets for July, August, and September 2015.

2.0 Field Work

HAI field activities related to monitoring and maintenance of the dense non-aqueous phase liquid (DNAPL) extraction system at surficial fill well locations MW-6-32 and MW-13-30 occurred during October 2015. The system recovered approximately 22 gallons of fluids in October, primarily DNAPL.

Tasks related to optimization and maintenance of the HC&C system and the groundwater treatment system were conducted in October 2015, with the system operating under Phase 2 testing parameters since July 21, 2015.

HAI and Anchor QEA initiated the Third Quarter 2015 Integrated Groundwater Monitoring Event at the Gasco and Siltronic properties during September 2015 (initiated September 16, 2015), with all sampling activities anticipated to be completed in October 2015 (completed October 13, 2015).

Baseline DNAPL removal as needed to maintain at levels below the top of the well sumps was conducted by Anchor QEA during October 2015 in the following wells near the river shoreline.

- MW-26U
- MW-27U
- MW-38U
- MW-PW-2L

On March 31, 2014 NW Natural discontinued routine discharges of treated groundwater to the sanitary sewer (Industrial Wastewater Discharge Permit 500.022). During October 2015 all water was directed to NW Natural's on-site wastewater treatment plant and discharged to the Willamette River consistent with National Pollutant Discharge Elimination System (NPDES) Permit No. 103061 (expires August 31, 2018). Results from NW Natural's NPDES effluent sampling are provided to DEQ in Discharge Monitoring Reports that are submitted on a monthly basis in accordance with the permit. A total of 11,448,715 gallons of treated water were discharged under the NPDES permit during October.

3.0 Anticipated Activities November and December 2015

NW Natural and DEQ technical working group communications and meetings are anticipated to occur as needed during November and December 2015 to discuss ongoing project tasks.

The draft Feasibility Study Work Plan for the Gasco Uplands will be under development during the indicated time-frame, with monthly DEQ check-in meetings scheduled over the duration of the plan development.

Installation of replacement groundwater extraction well PW-1Ub is anticipated to occur in November 2015 if access can be obtained from Siltronic Corporation.

Completion of TarGOST boring installations as part of the HC&C Performance Monitoring Program is anticipated to occur in November 2015 (completed by November 13, 2015).

The *HC&C Model Calibration and Validation Report* will be prepared for submittal to DEQ after agreements with the agency are reached related to model calibration. NW Natural has scheduled a Workshop with DEQ and EPA on December 2, 2015 to address outstanding questions on model calibration.

Long-term HC&C system operation, initiated during July 2015 and initially approved for nine months, will continue through indicated timeframe.

The Fourth Quarter 2015 groundwater monitoring event (water levels, DNAPL measurements, and new well sampling) will occur during December 2015.

Preparation and transmittal of monthly HC&C system Figure sets will occur during the indicated timeframe as part of the routine HC&C system reporting requested by DEQ.

A Contaminated Materials Management Plan is being prepared for submittal in the Fall of 2015.

The *Groundwater Treatment System Operations and Maintenance Manual*, prepared by Severson Environmental Services, Inc., dated May 2015 is being updated based on feedback provided by DEQ and DOJ and will be resubmitted in the Fall of 2015.

Initiation of supplemental Doane Creek investigation activities will occur once access agreements with the off-site property owners (Portland & Western Railroad and

Burlington Northern & Santa Fe Railway Company), which are presently under negotiation, are finalized. Agreements are expected to be in place during the Fall of 2015.

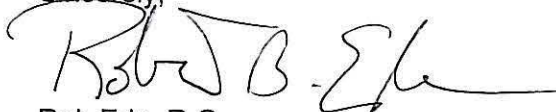
NW Natural is in the process of creating a new tabulation to represent NW Natural's overall groundwater monitoring program at the Gasco and Siltronic properties. A completed draft tabulation will be provided for DEQ review during Fall of 2015.

The following reports and work plans for the Site have been submitted to DEQ through the date of this progress report. Unless otherwise noted, NW Natural has not received DEQ comments on these documents.

- *Fill WBZ Trench Design Evaluation Report, Gasco/Siltronic*, prepared by Anchor QEA, dated April 8, 2015.
- *Hydraulic Control and Containment (HC&C) System Operation and Maintenance (O&M) Manual*, prepared by Anchor QEA, dated May 1, 2015.
- *HC&C Capture Performance and Monitoring Plan (PMP)*, prepared by Anchor QEA, dated May 1, 2015.

Should you have any questions, please contact the undersigned.

Sincerely,



Rob Ede, R.G.
Principal

robe@hahnenv.com

Cc: Mr. Bob Wyatt, NW Natural (electronic only)
Ms. Patty Dost, Pearl Legal Group PC (electronic only)
Ms. Rachel Melissa, Pearl Legal Group PC (electronic only)
Ms. Sarah Riddle, Pearl Legal Group PC (electronic only)
Mr. Carl Stivers, Anchor QEA, L.L.C. (electronic only)
Mr. John Edwards, Anchor QEA, L.L.C. (electronic only)
Mr. Ben Hung, Anchor QEA, L.L.C. (electronic only)
Mr. Ryan Barth, Anchor QEA, L.L.C. (electronic only)
Ms. Halah Voges, Anchor QEA, L.L.C. (electronic only)
Ms. Jen Woronets, Anchor QEA, L.L.C. (electronic only)
Mr. John Renda, Anchor QEA, L.L.C. (electronic only)
Mr. Henning Larsen, DEQ NW Region (electronic only)
Mr. Keith Johnson, DEQ NW Region (electronic only)
Mr. Dan Hafley, DEQ NW Region (electronic only)
Mr. Myron Burr, Siltronic Corporation (electronic only)
Mr. James Peale, Maul Foster & Alongi, Inc. (electronic only)
Ms. Kristine Koch, Region 10 EPA (electronic only)
Mr. Sean Sheldrake, Region 10 EPA (electronic only)
Mr. Rene Fuentes, Region 10 EPA (electronic only)
Ms. Eva DeMaria, Region 10 EPA (electronic only)
Mr. Lance Peterson, CDM, Inc. (electronic only)